# TABLET CONTAINING SYSTEM

## CROSS-REFERENCE TO RELATED APPLICATION

The present application claims the benefit of related provisional application serial number 60/428,530, filed 11/21/02, entitled "TABLET CONTAINING SYSTEM", the contents of which are incorporated herein by reference and are not admitted to be prior art with respect to the present invention by their mention in this cross-reference section.

## BACKGROUND

This invention relates to providing a tablet containing system that contains a tablet submerged under water within a toilet tank. The tablet may comprise detergent and/or bleach and/or dye, and assists in disinfecting and treating the water in the toilet tank. In the past, such tablets have been placed directly into toilet tanks without a container. Over time, as the tablet dissolved and disintegrated, pieces of the tablet broke off and could interfere with the operation of the flushing mechanism. For example, tablet pieces that came in direct contact with the toilet tank flapper could block the flapper from achieving a proper seal, causing the flapper to leak. Parts of the flushing mechanism made of rubber (or similar material) that came in direct contact with tablet pieces could result in the accelerated degradation of such flushing mechanism parts.

## OBJECTS AND FEATURES OF THE INVENTION

A primary object and feature of the present invention is to provide a tablet containing system that helps prevent tablet-portions from interfering with the toilet flushing mechanism. Another object and feature of the present invention is to provide a tablet containing system that can be tethered within the toilet bowl. Another object and feature of the present invention is to provide a tablet containing system that allows for tablet-portions to be easily removed from the toilet tank. Another object and feature of the present invention is to provide a tablet containing system that can conveniently be tethered to the toilet tank flush lever to provide extra agitation to the water surrounding the tablet when the toilet is flushed.

Another object and feature of the present invention is to provide a tablet containing system that combines a container clasping function with a tether attachment function for convenience and efficiency.

A further primary object and feature of the invention is to provide such a system, which is efficient, inexpensive, and handy. Other objects and features of this invention will become apparent with reference to the following descriptions.

## SUMMARY OF THE INVENTION

In accordance with a preferred embodiment hereof, this invention provides a tablet container system for containing at least one cleaning tablet in a toilet tank comprising a flushing mechanism and containing flushable water, comprising, in combination: at least one container, comprising at least one interior portion and at least one exterior portion, structured and arranged to contain the at least one tablet; wherein such at least one container is structured and arranged to allow access to such at least one interior portion of such at least one container wherein the at least one tablet can be removably inserted; at least one fastener structured and arranged to prevent accidental access to such at least one interior portion of such at least one container; and a plurality of orifices structured and arranged to permit substantially free flow of the water between such at least one exterior portion and such at least one interior portion of such at least one container; wherein such plurality of orifices are structured and arranged to substantially block egress of significantly-sized tablet-portions from such at least one interior portion of such at least one container. Moreover, it provides such a tablet container system wherein such plurality of orifices are structured and arranged to substantially block egress of tablet-portions larger than about 1/8 inch diameter from such at least one interior portion of such at least one container.

Additionally, it provides such a tablet container system wherein such plurality of orifices are structured and arranged to substantially block egress of tablet-portions larger than about 1/16 inch diameter from such at least one interior portion of such at least one container. Also, it provides such a tablet container system wherein such plurality of orifices permits fluid to enter such at least one interior portion through a first side of such container and exit such at least one interior portion through a second side, opposite such first side, of such at least one container. In addition, it provides such a tablet container system wherein such plurality of orifices are located over more than half of a total exterior surface area of such at least one container. And, it provides such a tablet container system further comprising at least one tether structured and arranged to tether such at least one container to the toilet tank. Further, it provides such a tablet container system wherein such at least one container consists essentially of integrally-molded plastic.

In accordance with another preferred embodiment hereof, this invention provides a tablet container system for containing at least one cleaning tablet in a toilet tank comprising a flushing mechanism and containing flushable water, comprising, in combination: at least one container, comprising at least one interior portion and at least one exterior portion, structured and arranged to contain the at least one tablet; wherein such

container is structured and arranged to allow access to such at least one interior portion of such at least one container, wherein the at least one tablet can be removably inserted; at least one fastener structured and arranged to prevent accidental access to the at least one interior portion of such container; a plurality of orifices structured and arranged to permit substantially free flow of fluid between such at least one exterior portion and such at least one interior portion of such at least one container; and at least one tether structured and arranged to tether such at least one container to the toilet tank; wherein such at least one tether comprises such at least one fastener. Even further, it provides such a tablet container system wherein such at least one tether comprises at least one chain. Moreover, it provides such a tablet container system wherein such at least one tether comprises at least one cable. Additionally, it provides such a tablet container system wherein such at least one fastener comprises at least one clip. Also, it provides such a tablet container system wherein such at least one clip comprises metal.

In accordance with another preferred embodiment hereof, this invention provides a tablet container system for containing at least one cleaning tablet in a toilet tank comprising a toilet tank flush lever and containing flushable water, comprising, in combination: at least one container, comprising at least one interior portion and at least one exterior portion,

structured and arranged to contain the at least one tablet; wherein such container is structured and arranged to allow access to such at least one interior portion of such at least one container, wherein the at least one tablet can be removably inserted; at least one fastener structured and arranged to prevent accidental access to the at least one interior portion of such container; a plurality of orifices structured and arranged to permit substantially free flow of fluid between such at least one exterior portion and such at least one interior portion of such at least one container; and at least one tether structured and arranged to tether such at least one container to the toilet tank flush lever. In addition, it provides such a tablet container system wherein such plurality of orifices are structured and arranged to substantially block egress of tablet-portions larger than about 1/8 inch diameter from such at least one interior portion of such at least one container. And, it provides such a tablet container system wherein such plurality of orifices permits fluid to enter such at least one interior portion through a first side of such container and exit such at least one interior portion through a second side, opposite such first side, of such at least one container. Further, it provides such a tablet container system wherein such at least one tether comprises such at least one fastener. Even further, it provides such a tablet container system wherein such at least one container comprises: at least one first container portion;

at least one second container portion; and at least one hinge; wherein such at least one hinge connects such at least one first container portion to such at least one second container portion. Even further, it provides such a tablet container system wherein such at least one container essentially consists of integrally-molded plastic. Even further, it provides such a tablet container system wherein such plurality of orifices are located over more than half of surface area of such at least one container. Even further, it provides such a tablet container system wherein such at least one fastener is located on a side of such at least one container opposite from such at least one hinge.

Additionally, this invention provides each and every novel feature, element, combination, step and/or method disclosed or suggested by this provisional patent application.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a tablet container, according to a preferred embodiment of the present invention, showing a tablet being inserted into the opened tablet container.

FIG. 2 is a perspective view of the tablet container of FIG. 1, closed and adjacent to two different embodiments of a tether.

FIG. 3 is a front view of a toilet tank (partially cut-away) showing tablet-containing systems installed in three

different ways within the toilet tank.

FIG. 4 is a top view of the tablet container of FIG. 1, partially showing an attached tether.

FIG. 5 is a side view of the tablet container of FIG. 1, partially showing an attached tether.

FIG. 6 is a side view (in section) of the tablet container of FIG. 1, partially showing an attached tether.

FIG. 7 is a perspective view of an attacher fastener and part of an attached tether.

FIG. 8 is a perspective view of an alternate embodiment of a tablet container (with a shape different than the embodiment of FIG. 1).

FIG. 9 is a perspective view of an alternate preferred embodiment of a tablet containing system with a square shaped tablet container.

FIG. 10 is a perspective view of an alternate preferred embodiment of a tablet container (in the closed/clasped position).

FIG. 11 is a perspective view of the tablet container of FIG. 10 in the closed/clasped position.

## DETAILED DESCRIPTION OF THE BEST MODE AND PREFERRED EMBODIMENTS OF THE INVENTION

Reference is now made to the drawings. FIG. 1 is a perspective view of tablet container **100**, with interior portion **110** and exterior portion **112**, according to a preferred embodiment of the present invention, showing at least one tablet **150** being inserted into the opened tablet container **100** (embodying herein at least one container, comprising at least one interior portion and at least one exterior portion, structured and arranged to contain the at least one tablet). There are many instances throughout the specification where Applicant uses the phrase, "at least one", to indicate that, although only one may be shown in the drawings, it is contemplated that more than one may suffice. Upon reading the teachings of this specification, those with ordinary skill in the art will now understand that, under appropriate circumstances, considering issues such as tablet size, tablet container size, etc., other tablet container arrangements may suffice, such as, for example, a tablet container adapted to contain more than one tablet **150** and a tablet container adapted to contain tablets of different sizes and shapes, etc. Preferably, tablet container **100** comprises container portion **102a** connected to container portion **102b** by hinge **104**, as shown. Preferably, hinge **104** permits access to interior portion **110** of tablet container **100**, allowing tablet **150** to be removably inserted within tablet

container **100**, as shown (embodying herein wherein such at least one container is structured and arranged to allow access to such at least one interior portion of such at least one container wherein the at least one tablet can be removably inserted; and embodying herein wherein such at least one container comprises at least one first container portion, at least one second container portion, at least one hinge, wherein such at least one hinge connects such at least one first container portion to such at least one second container portion).

Preferably, tablet container **100** comprises clasp **106**, as shown. Preferably, clasp **106** comprises clasp portion **106a** and clasp portion **106b**, as shown. Preferably, clasp portion **106a** and clasp portion **106b** clasp container portion **102a** and container portion **102b** together (keeping tablet **150** within interior portion **110**). Preferably, clasp portion **106a** and clasp portion **106b** each comprise tab **114**, with hole **116**, as shown. Preferably, when container portion **102a** and container portion **102b** are pressed together, hole **116** in each clasp portion **106** are aligned, and container fastener **122** can be inserted through such aligned hole **116** to lock container portion **102a** and container portion **102b** in place (with tablet container **100** in a "closed" arrangement), as shown (embodying herein at least one fastener structured and arranged to prevent accidental access to such at least one interior portion of such at least one container; and embodying herein wherein such at least one tether

comprises such at least one fastener). Upon reading the teachings of this specification, those with ordinary skill in the art will now understand that, under appropriate circumstances, considering issues such as production cost, material selection, convenience, etc., other container fastening arrangements, such as snaps, threaded fittings, interlocking tabs (as shown in FIG. 9, FIG. 10 and FIG. 11), tabs without holes **116**, fastening arrangements where container fastener **122** is not used for locking, etc., may suffice. Preferably, clasp **106** is located on a side of the container portion **102a** (and container portion **102b**) opposite hinge **104,** as shown, so that tablet container **100** can be fastened to effectively contain portions of tablet **150** (embodying herein wherein such at least one fastener is located on a side of such at least one container opposite from such at least one hinge). Upon reading this specification, those skilled in the art will now understand that, under appropriate circumstances, considering issues such as production cost, type of container fastening mechanism, etc., other locations for clasp portion **106**, etc., may suffice, for example, in a case where container portion **102a** and container portion **102b** are fastened by a threaded connection, it may suffice to eliminate clasp portion **106** and/or eliminate hinge **104**. Thus, tablet **150** can be secured within tablet container **100**.

Preferably, for efficiency and reduced cost, container

portion **102a**, clasp portion **106a**, container portion **102b**, clasp portion **106b**, and hinge **104**, consist essentially of integrally-molded plastic, molded together as a single unit (embodying herein wherein such at least one container consists essentially of integrally-molded plastic). Preferably, hinge **104** comprises plastic sufficiently flexible such that hinge **104** may bend, as shown. Upon reading the teachings of this specification, those with ordinary skill in the art will now understand that, under appropriate circumstances, considering issues such as production cost, durability, chemical reactivity, etc., other materials may suffice, such as, for example, metal, etc. Also upon reading the teachings of this specification, those with ordinary skill in the art will now understand that, under appropriate circumstances, considering issues such as production cost, material selection, etc., other hinge arrangements may suffice, such as, for example, a butt-hinge with a pin, etc.

FIG. 2 is a perspective view of tablet container **100** in the closed position and adjacent to two different embodiments of tether **120**. Preferably, tablet containing system comprises tether **120**. Preferably tablet containing system comprises container fastener **122**, for fastening container to tether **120**. Container fastener **122** may or may not be used to assist in locking container portion **102a** and container portion **102b** in a closed position. Preferably, container fastener **122** comprises metal clip, as shown (embodying herein wherein such at least one

fastener comprises at least one clip, and embodying herein wherein such at least one clip comprises metal).

Preferably, tether **120** comprises container fastener **122**, cable **128** (embodying herein wherein such at least one tether comprises at least one cable), and attacher fastener **124**. Upon reading this specification, those skilled in the art will now understand that, under appropriate circumstances, considering issues such as manufacturing cost, durability, etc., other tether arrangements may suffice, such as, for example, replacing cable **128** with something else, such as, for example, chain **130** (embodying herein wherein such at least one tether comprises at least one chain), as shown, etc. Upon reading the teachings of this specification, those with ordinary skill in the art will now understand that, under appropriate circumstances, considering issues such as which part of the toilet tank tablet holder will be tethered, etc., other types of attacher fastener arrangements may suffice, such as, for example, clips , such as, for example, attacher fastener **126**, hooks, such as, for example, attacher fastener **126b** (see FIG. 9), etc. A plurality of orifices **108** allows water flow **222** through tablet container **100**. Orifices **108** allow water into and/or out of tablet container **100** so that dissolved portions of tablet **150** can mix with water in toilet tank **200**. Preferably, orifices **108** are small enough such that if "significantly-sized" pieces of tablet **100** break off, such pieces are still retained within tablet

container **100** (embodying herein wherein such plurality of orifices are structured and arranged to substantially block egress of significantly-sized tablet-portions from such at least one interior portion of such at least one container). Pieces of tablet **150** are considered "significantly-sized" if they are large enough to interfere with the functioning of the toilet tank flushing system (for example, by pieces blocking a toilet tank flapper from achieving a proper seal). Preferably, each of orifices **108** comprises an effective diameter ("effective diameter" being defined as the largest diameter solid sphere that can pass through the orifice) of less than about 3/16 inch, preferably an effective diameter of less than about 1/8 inch (embodying herein wherein such plurality of orifices are structured and arranged to substantially block egress of tablet-portions larger than about 1/8 inch diameter from such at least one interior portion of such at least one container), preferably an effective diameter of less than about 1/16 inch (embodying herein wherein such plurality of orifices are structured and arranged to substantially block egress of tablet-portions larger than about 1/16 inch diameter from such at least one interior portion of such at least one container), since experiment has shown that orifices **108** of this size are small enough to effectively block the egress of "significantly-sized" portions of tablet **150**, and yet orifices **108** of this size are still sufficiently large enough to permit substantially free flow of

fluid between said exterior and said interior of said container (embodying herein a plurality of orifices structured and arranged to permit substantially free flow of the water between such at least one exterior portion and such at least one interior portion of such at least one container). Preferably, portions of tablet **150** are contained within tablet container **100** so that portions of tablet **150** can be easily removed from the toilet tank **200** (as opposed to portions of tablet **150** potentially being scattered throughout the bottom of toilet tank **200** when tablet **150** is placed directly in toilet tank **200** without tablet container **100**). Tether **120** allows a user to remove the remains of tablet **150** without the need to submerge the user's hand to the bottom of toilet tank **200**. Preferably, orifices **108** are located on opposing sides of tablet container **100**, to permit fluid to enter one side and exit the other side, promoting the free flow of fluid through tablet container **100**, as shown (embodying herein wherein such plurality of orifices permits fluid to enter such at least one interior portion through a first side of such container and exit such at least one interior portion through a second side, opposite such first side, of such at least one container). Preferably, orifices **108** are located over more than half of a total exterior surface area of tablet container **100** to promote the free flow of fluid through tablet container **100**, as shown (embodying herein wherein such plurality of orifices are located over more than half of a

total exterior surface area of such at least one container). Preferably, orifices **108** comprise a square or slotted shape, as shown. Upon reading the teachings of this specification, those with ordinary skill in the art will now understand that, under appropriate circumstances, considering issues such as production cost, material selection, how particular kinds of tablets disintegrate, and what size portions of tablet **150** will interfere with the functioning a toilet flushing mechanism, etc., other orifice arrangements may suffice, such as, for example, other orifice shapes (such as, for example, circular, star-shaped, etc.) and other orifice sizes, etc.

FIG. 3 is a front view of a toilet tank (partially cut-away) showing tablet-containing systems installed in three different ways within the toilet tank. As shown, preferably, tether **120** may be used to tether tablet container **100** below water surface **220** (embodying herein at least one tether structured and arranged to tether such at least one container to the toilet tank) from toilet tank flush lever **206** (embodying herein at least one tether structured and arranged to tether such at least one container to the toilet tank flush lever). Toilet tank flush lever **206** is attached to toilet tank flush handle **204**, so that when toilet tank flush handle **204** is depressed, tablet container **100** moves, thereby agitating the water surrounding the tablet container **100** and increasing water flow **222** (See FIG. 2) through such plurality of orifices **108**, as

shown. Preferably, tether **120** is connected to toilet tank flush lever **206** by connecting attacher fastener **124** to one of the openings **208**. Tether **120** allows tablet **150** to be removed from toilet tank **200** more easily and conveniently, since a user does not have to reach down into toilet tank **200** to remove tablet **150**, but instead, may pull the tablet container **100** up by tether **120**. Upon reading the teachings of this specification, those with ordinary skill in the art will now understand that, under appropriate circumstances, considering issues such as the convenience of tethering tablet container **100** to toilet tank flushing mechanisms, etc., other tablet container installation arrangements may suffice, such as, for example, tethering tablet container **100** to toilet tank wall, for example, by attaching attacher fastener **124** to tank wall fastener **132**, as shown, or letting tablet container **100** rest on the bottom of toilet tank **200**, as shown, etc.

FIG. 4 is a top view of the tablet container **100** of FIG. 1, partially showing an attached tether **120**.

FIG. 5 is a side view of tablet container **100**, partially showing attached tether **120**.

FIG. 6 is a side view (in section) of tablet container **100**, partially showing an attached tether **120**.

FIG. 7 is a perspective view of a portion of tether **120** and attached tank wall fastener **132**. Tank wall fastener **132** is preferably structured and arranged to hang on the top lip of

toilet tank wall **202**, as shown. Preferably, tablet container **100** comprises a round shape, as shown in FIG. 4, since tablet **150** typically comprises a round shape. Preferably, dimensions of tablet container **100** are sized to accommodate a typical tablet **150** within tablet container **100**, as shown. Preferably, tablet container **100** comprises a diameter of about 3-1/2 inches. Preferably, tablet container **100** comprises a width of about 1-1/2 inches. Upon reading the teachings of this specification, those with ordinary skill in the art will now understand that, under appropriate circumstances, considering issues such as tablet size, tablet shape, etc., other tablet container arrangements may suffice, such as, for example, different dimensions, different diameters, widths, shapes, etc.

FIG. 8 is a perspective view of an alternate preferred embodiment of a tablet containing system. Tablet container **100b** (analogous to tablet container **100**) comprises a square shape, as shown.

FIG. 9 is a perspective view of an alternate preferred embodiment of a tablet containing system. Preferably, tablet container **100c** (analogous to tablet container **100**) has slot-shaped orifices **108c**, as shown. Preferably, clasp **106** comprises clasp portion **106aa** and clasp portion **106bb**, which comprise interlocking tabs, as shown. Preferably, tablet container **100c** comprises tether tab **127**, preferably with hole **127b**, as shown, for attaching tether **120** to tablet container **100c**. Preferably,

tether **120** is attached to tether tab **127** with tether fastener **122**c, as shown.

FIG. 10 is a perspective view of an alternate preferred embodiment of tablet container **100d** (in the closed/clasped position). Preferably, tablet container **100d** (analogous to tablet container **100**) has slot-shaped orifices **108d**, as shown. Preferably, clasp **106** comprises clasp portion **106a'** and clasp portion **106b'**, which comprise interlocking tabs, as shown. Preferably, tablet container **100d** comprises tether tab **127**, preferably with hole **127b**, as shown, for attaching tether **120** to tablet container **100d**. Preferably, tether **120** is attached to tether tab **127** with tether fastener **122c**, as shown.

FIG. 11 is a perspective view of tablet container **100d** in the open position.

Although applicant has described applicant's preferred embodiments of this invention, it will be understood that the broadest scope of this invention includes such modifications as diverse shapes, sizes, materials, etc. Such scope is limited only by the below claims as read in connection with the above specification. Further, many other advantages of applicant's invention will be apparent to those skilled in the art from the above descriptions and the below claims.